

## CLAIMS

1. A peripheral unit for monitoring a device of a programmable controller, said peripheral unit comprising:

a monitor request instruction issuing-side shared memory  
5 into which a list of devices to be monitored is written according to a monitor request instruction of a monitoring application executing-section;

a monitor request instruction issuing unit for issuing the monitor request instruction according to a content of the  
10 device list after the device list has been written into said monitor request instruction issuing-side shared memory;

a communication unit for transmitting a monitor request instruction issued by said monitor request instruction issuing unit to said programmable controller and for receiving the  
15 monitor data according to the monitor request instruction from said programmable controller;

a monitor data obtaining unit for obtaining the monitor data received from said programmable controller; and

✓ a monitor data obtaining-side shared memory into which  
20 the monitor data obtained by said monitor data obtaining unit is written, wherein

said monitoring application executing-section is given the monitor data from said monitor data obtaining-side shared memory.

2. The peripheral unit according to claim 1, wherein said monitor request instruction issuing-side shared memory has a rewrite-flag section for storing a rewrite-flag that shows a rewriting of the device list,

5       said monitor request instruction issuing unit issues a monitor request instruction according to the contents of a new device list when a rewrite-flag of the monitor request instruction issuing-side shared memory has been stood and falls the last rewrite-flag, and continues to issue the monitor  
10   request instruction according to the contents of the last device list until when a next rewrite-flag of said monitor request instruction issuing-side shared memory has been stood;

      said monitor data obtaining-side shared memory has initialization flag section for storing an initialization flag  
15   that falls when the device list is changed and that stands when monitor data has been written into said monitor data obtaining-side shared memory after the device list has been changed; and a rewrite-flag section for storing a rewrite-flag that stands when the monitor data of said monitor data  
20   obtaining-side shared memory has been rewritten by said monitor data obtaining unit and that falls when this monitor data has been read by said monitoring application executing-section, and

      said monitoring application executing-section is given the monitor data from said monitor data obtaining-side shared  
25   memory when both the initialization flag and the rewrite-flag

of said monitor data obtaining-side shared memory have been stood, and is not given the monitor data from said monitor data obtaining-side shared memory when the initialization flag has fallen.

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3. The peripheral unit according to claim 1, wherein said monitor data obtaining-side shared memory has a change flag table section for storing a device value change flag that is set for each device of a device list and that stands when the device value has changed and falls when the device value has been read,

said monitor data obtaining unit updates only the device value of said monitor data obtaining-side shared memory for a device of which device value has changed, and stands a device value change flag, and

said monitoring application executing-section is given a device value of a device for which a device value change flag is standing, from said monitor data obtaining-side shared memory.

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4. The peripheral unit according to claim 1, wherein a plurality of said monitoring application executing-sections are provided as monitoring request origins,

said monitor request instruction issuing-side shared memory and said monitor data obtaining-side shared memory are

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provided by a plurality of numbers respectively corresponding to said monitoring application executing-sections, and

said monitor request instruction issuing unit integrates the same devices based on request device lists of request  
5 origins and said programmable controller, thereby optimizing device lists.

5. The peripheral unit according to claim 1, further comprising a timer monitoring unit for measuring a lapse time  
10 from when a monitor request instruction has been issued till when the monitor data has been obtained, wherein

a predetermined monitoring cycle time is compared with a lapse time measured by said timer monitoring unit, when the lapse time is shorter than the monitoring cycle time, the  
15 monitor is prohibited until when the specified cycle has reached, and when the lapse time is longer than the monitoring cycle time, the priority of the monitoring is lowered.

6. The peripheral unit according to claim 5, wherein when  
20 the lapse time is longer than the monitoring cycle time, the monitoring cycle time is corrected so that the monitoring cycle time becomes longer.